



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,062	12/28/2000	Paul E. McKenney	BEA9-2000-0013-US1	9320
30011	7590	04/21/2004	EXAMINER	
LIEBERMAN & BRANDSDORFER, LLC 12221 MCDONALD CHAPEL DRIVE GAITHERSBURG, MD 20878			HUYNH, KIM T	
			ART UNIT	PAPER NUMBER
			2112	

DATE MAILED: 04/21/2004

18

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/753,062

Applicant(s)

MCKENNEY ET AL.

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Jackson et al. (US Patent 6,473,819)

As per claims 1, 13, 22, Jackson discloses a method for efficiently handling high contention locking in a multiprocessor computer system, comprising:

- Organizing at least some of the processors into a hierarchy; (col.4, line 51- col.5, line 51)
- Providing a lock selected from the group consisting of an interruptible lock, (col.3, lines 25-53) and a lock which waits using only local memory; and (col.5, lines 23-51)
- Processing the lock responsive to the hierarchy. (col.6, lines 15-30)

As per claims 2, 14, 25, Jackson discloses wherein the processing step conditionally acquires the lock. (col.9, lines 20-25), (col.2, lines 12-28)

As per claims 3, 15, 26, Jackson discloses wherein the processing step returns a failure to grant the lock if the lock is not immediately available. (col.1, lines 49-38), wherein by default not available not grant)

As per claims 4, 16, 27, Jackson discloses wherein the processing step unconditionally acquires the lock. (col.6, lines 27-30)

As per claims 5, 17, 28, Jackson discloses wherein the processing step spins on the lock until the lock is available. (col.6, lines 27-30)

As per claims 6, 18, Jackson discloses the method further comprising allowing system interrupts while spinning on the lock. (col.3, lines 45-48)

As per claims 7, 19, 29, Jackson discloses wherein the processing step unconditionally releases the lock. (col.6, lines 27-30)

As per claim 8, Jackson discloses wherein the processing step the processors spin on private memory. (col.5, lines 42-51)

As per claim 9, Jackson discloses wherein the hierarchy includes a data structure having a bit mask indicating which processors of a group are waiting for the lock. (col.6, lines 15-30)

As per claim 10, Jackson discloses wherein the hierarchy includes a data structure having a bit mask indicating which groups of processors have processors waiting for the lock. (col.5, lines 28-41)

As per claims 11, 20, 30, Jackson discloses the method further comprising maintaining a release flag for a group of processors to prevent races between

acquisition and release of the lock (col.6, lines 15-30), (col.7, line 60-col.8, line 15)

As per claims 12, 21, 31, Jackson discloses the method further comprising maintaining a handoff flag for a group of processors to grant the lock to a processor requesting an unconditional lock from a processor requesting a conditional lock. (col.8,line 36-col.9,line 36)

As per claim 23, wherein the medium is a recordable data storage medium. (col.3, lines 20-44), wherein queue locks performing as data information storage.

As per claim 24, Jackson discloses wherein the medium is a modulated carrier signal. (col.3, lines 20-44, wherein signals to/from system should be modulated/demodulated as for communicating within system.)

***Response to Amendment***

3. Applicant's arguments filed on 2/5/04 have been fully considered but are moot in view of the new ground(s) of rejection.

a. In response to applicant's argument that Jippo does not teach or suggest interruptible lock. However, Jackson's system introduces a novel methodology of implementing queue locks that allows for interruptability from external interrupts while eliminating any dedlock conditions. Permitting the computation agent that has been given ownership of a lock to be able to relinquish ownership to another waiting computation agent when an intervening interrupt is encountered. (col.3, lines 25-59)

Thus, the prior art teaches the invention as claimed and do not distinguish over the prior art as applied.

**Conclusion**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM- 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.



Kim Huynh

April 14, 2004

Khanh Dang  
Primary Examiner